as that provided in the previous actions. In addition, in response to Applicants' clarification submitted in the previous response, the Examiner states that the various functions or biological activities disclosed in the specification (e.g., binding to hyaluronate) are not specific to the sequences recited in the claims. Labeling the disclosed biological activities as "prophetic," the Examiner further states that such disclosure does not arise to patentable utility because there is no available evidence which indicates that the disclosed interactions/functions occurred amongst the claimed sequences or IPM molecules in general. These rejections are respectfully traversed for the following reasons.

I. The present disclosure and specific utilities of the claimed sequences

1. All evidence indicate practical utilities of the IPM sequences

The prior art knowledge and the disclosure of the subject application all suggest that the IPM sequences are involved in retinal adhesion and ocular disorders. It is known that the IPM sequences (e.g., IPM 150) is selectively expressed in the retinal tissue (see, e.g., Felbor et al., Cytogene. Cell Genet. 81:12-17, 1998, at page 16, left column; copy attached). The subject specification disclosed that IPMC proteins (e.g., IPM150) contain hyaluronan-binding motifs and that IPM150 could interact with hyaluronan, a component of the interphotoreceptor matrix, to effect retinal adhesion (see, e.g., page 20, line 28-30; and page 21, lines 3-9). It was also taught in the subject specification that the IPM proteins also contain EGF-like domains. Although EGF-like domains may be present in proteins with diverse function, as noted by the Examiner, it does not negate the fact that they are present in many extracellular matrix proteins and are known to promote the survival of neighboring cells.

The IPM sequences are also genetically linked to a number of macular dystrophies. For example, Felbor et al. indicated that IMPG1 (i.e., IPM150) is a candidate for retiniopathies (see, e.g., the title and the abstract). The authors specifically noted that "the selective expression in retinal tissue and the chromosomal mapping of IMPG1 to 6q13-q15 have identified this gene as an attractive candidate for several human macular dystrophies . . ." (see, page 16, left column). Similarly, the subject specification disclosed (see, e.g., page 8,

lines 16-21) that the IPM 150 sequence is mapped to the 6q14.2-q15 region which also contains loci for progressive bifocal chorioretinal atrophy, autosomal dominant Stargardt's-like macular dystrophy, North Carolina macular dystrophy and Salla disease.

Based on the present disclosure and the prior art knowledge, there is no doubt that the present invention can have practical and useful applications. For example, as disclosed in the specification, they could find applications in diagnosing (e.g., by detecting a mutation in the IPM molecules or an abnormal expression of the IPM molecules) and treating (e.g., in gene therapy) ocular disorders that are associated with abnormal retinal adhesion, such as retinal detachment and macular degeneration.

2. The disclosed utilities are specific, not general

According to the MPEP, a "specific" utility is specific to the subject matter claimed. It is in contrast to a general utility which would be applicable to the broad class of invention (MPEP § 2107.01-I, at page 2100-32). The MPEP also sets forth exemplified circumstances under which a specific utility is not present. These examples include (i) disclosing a compound which may be useful in treating unspecified disorders; (ii) claiming a polynucleotide whose use is disclosed simply as a "gene probe" or "chromosome marker"; and (iii) a general statement of diagnostic utility, such as diagnosing an unspecified disease (MPEP, § 2107.01 at page 2100-32).

Clearly, the present invention does not fall into any of the above categories which only disclose general utilities. As discussed above, the specific utilities of the presently claimed IPM sequences are substantiated by, e.g., their selective expression in retinal tissue and their genetic linkage to certain specific ocular diseases. The fact that IPM150 is believed by the skilled artisans (see, e.g., Felbor et al., supra) to be the candidate locus for retiniopathies also undoubtedly underscores the specificity of the practical utilities of the presently claimed sequences. Thus, rather than unspecified disorders or merely as gene probe (i.e., general utility), the practical utilities disclosed in the subject specification are specific to the IPM sequences.